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CLAIMS

1. A first device (MD1-3) for communicating with other devices using a frequency hopping wireless interface, the first device being arranged to send a
5   sequence of messages (ID) each on a different frequency, for finding other devices (AP1-3) within range, and being arranged to listen for a response during a subsequent response window, on one or more response frequencies, being a subset of less than all possible response frequencies, and to receive return information from the other devices without needing to set up a
10 frequency hopping connection, the response window having a duration sufficient to receive more than one response.

2. The first device of claim 1, wherein the sequence of frequencies of the messages is predetermined and related to the time of the start of the
15 response window.

3. The first device of claim 1 or 2, being a mobile device (MD1-3).

4. The first device of any preceding claim, the sequence of messages
20 having an indication (RCI) of a response channel.

5. The first device of any preceding claim, the return information having received signal strength information (RSSI) from the other device or devices.

25   6. The first device of any preceding claim, the return information having location information from the other device or devices.

7. The first device of any preceding claim, the return information including frequency hopping and synchronisation information (FHS).
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8. The first device of any preceding claim, the wireless interface being compatible with the Bluetooth standard.

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9. The first device of any preceding claim, the other device being a network access point (AP1-3).

5   10. The first device of claim 4 or any claim depending on claim 4, the response channel indication comprising a four bit code.

11. The first device of claim 4 or any claim depending on claim 4, the response channel indication being altered cyclically.

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12. The first device of any preceding claim, incorporating a mobile phone or mobile personal computer (PDA).

13. An other device (AP1-3) for use with the first device (MD1-3) of any
15   preceding claim, the other device being arranged to listen for one or more of the messages, to determine a time of the response window after the sequence of messages, and to send return information on that response frequency to the first device without needing to establish a frequency hopping connection.

20   14. The other device of claim 13, the messages including an indication (RCI) of a response channel, and the other device being arranged to use the response channel indication to send a response.

15. A method of communicating between a first device (MD1-3) and
25   other devices (AP1-3) having a frequency hopping wireless interface, the method having the steps of:
       sending from the first device a sequence of messages (ID) each on a different frequency, for finding other devices within range,
       listening at the first device on one response frequency or on a subset of
30   less than all possible response frequencies, during a response window having a duration sufficient to receive more than one response,

determining at each of the other devices in range, a time of the response window after the sequence of messages, and

sending a response during the response window, from each of the other devices in range, to the first device, containing return information without
5   needing to set up a frequency hopping connection.

16. A method of offering a service on mobile devices (MD1-3), using return information sent to mobile devices by the method of claim 15, where the first device is a mobile device.
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17. The method of claim 16, the return information having location information, the service being a location based service, and the mobile device incorporating a mobile phone.

15   18. A group of access points, each incorporating an other device (AP1-3) of claim 13, and coupled to provide location information, or access to other telecommunications networks.

19. A first device (MD1-3) for communicating with other devices (AP1-3)
20   using a frequency hopping wireless interface, the first device being arranged to send a sequence of messages (ID) each on a different frequency, for finding other devices within range, the messages including an indication (RCI) of a response channel, and being arranged to listen for a response during a subsequent response window, on one response frequency, and to receive
25   return information from the other devices without needing to set up a frequency hopping connection.

20. Software for a first device (MD1-3) for use in the method of claim 15, for carrying out the steps of:
30   sending from the first device a sequence of messages (ID) each on a different frequency, for finding other devices (AP1-3) within range, and

listening at the first device on one response frequency or on a subset of less than all possible response frequencies, during a response window having a duration sufficient to receive more than one response.